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TOWARD A MODERN THEORY OF CASE.
BY- FILLMORE, CHARLES J.
OHIO STATE UNIV., COLUMBUS, RESEARCH FOUNDATION
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THE PAPER QUESTIONS THE ADEQUACY OF CHOMSKY'S PROPOSALS FOR FORMALLY RECONSTRUCTING THE DISTINCTION BETWEEN GRAMMATICAL CATEGORIES AND GRAMMATICAL FUNCTIONS. THE DEEP STRUCTURE VALIDITY OF THE NOTIONS "SUBJECT" AND "OBJECT" IS ALSO QUESTIONED. THE WRITER PROPOSES TO RECOGNIZE, INSTEAD, VARIOUS INTRODUCED NOUN PHRASES SUGGESTIVE OF THE TRADITIONAL NOTION OF "CASES," EACH, IN ENGLISH, BEGINNING WITH A PREPOSITION. THE SYNTACTIC RELATIONSHIP OF EACH OF THESE TYPES TO THE MAIN VERB OF THE SENTENCE IS DEFINED WITH REFERENCE TO THE CATEGORY UNDER WHICH IT IS INTRODUCED, HAVING NO DIRECT CONNECTION WITH WHATEVER EVENTUAL STATUS IT MAY HAVE AS SUBJECT OR OBJECT. THUS, EACH SIMPLE SENTENCE IN A LANGUAGE IS MADE UP OF A VERB AND A COLLECTION OF NOUNS IN VARIOUS "CASES," IN THE DEEP STRUCTURE SENSE. IN THE SURFACE STRUCTURE, CASE DISTINCTIONS ARE SOMETIMES PRESERVED, AND SOMETIMES NOT, DEPENDING ON THE LANGUAGE, THE NOUN, OR THE IDIOSYNCRATIC PROPERTIES OF CERTAIN GOVERNING WORDS. (IT)

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1314 KINNEAR ROAD COLUMBUS, OHIO 43212

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Project on Linguistic Analysis
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TOWARD A MODERN THEORY OF CASE*

Charles J. Fillmore

In Chapter 2 of his book Aspects of the theory of syntax,[1]

[1]Noam Chomsky, M. I. T. Press, 1965, esp. pp. 63-74.

Chomsky points out the essentially relational nature of such grammatical concepts as Subject (of a sentence) and Object (of a verb, or of a predicate phrase) as opposed to the categorial nature of such notions as Verb or Noun-phrase. The important distinctinn is there drawn between grammatical relations or grammatical functions, on the one hand, and grammatical categories on the other hand.

The distinction can be captured in formal grammars, according to Chomsky, by introducing category symbols as constituent labels in the phrase structure rules of the base component, and by defining the grammatical relations as in fact relations among category symbols within the underlying phrase-markers provided by the base. Thus Sentence, Noun-phrase and Verb-phrase, for example, are provided as category symbols by the base, while the notion Subject is defined as a relation between a Noun-phrase and an immediately dominating sentence, the term Object as a relation between a Noun-phrase and an immediately dominating Verb-phrase.

My purpose in this essay is to question the deep-structure validity of the notions Subject and Object, and also to raise doubts about the adequacy of Chomsky's proposals for formally reconstructing

*This paper is a longer version of a paper entitled "A proposal concerning English prepositions" appearing in F. Dineen, ed., Monograph Series on Languages and Linguistics Number 19, Georgetown University Institute of Languages and Linguistics, Washington, D. C. The Georgetown version was less complete in several respects since it was required to have a 20 minutes' reading time.

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the distinction between grammatical categories and grammatical functions. My inquiry will lead to a proposal which renders unnecessary the distinction in English grammar between Noun-phrase and Preposition-phrase, and to the suggestion that something very much like grammatical case plays a role in the groundwork of grammars that is much less superficial than is usually recognized.

I begin my argument by asking, concerning such expressions as IN THE ROOM, TOWARD THE MOON, ON THE NEXT DAY, IN A CARELESS WAY, WITH A SHARP KNIFE, and BY MY BROTHER, how it is possible in grammars of the type illustrated in Aspects to reveal both the categorial information that all of these expressions are Preposition-phrases and the functional information that they are adverbials of Location, Direction, Time, Manner, Instrument and Agent respectively. Instead of having a category label Time, it ought to be possible--if Chomsky's proposal is adequate--to recognize that a Preposition-phrase whose head is a Time noun has the syntactic function Time Adverbial within the constituent which immediately contains it.

It seems impossible to provide both types of information in a natural way for the reason that there may be several adverbial expressions in a simple sentence, there are ordering restrictions among these, and if they all start out with the same category Preposition-phrase there is no known device by which the further expansion of this category can be constrained according to the permitted order of adverbial types in a single sentence.

Most of the sample phrase-structure rules for English that I have seen recently have introduced categorially such terms as Manner, Frequency, Extent, Location, Direction, etc. In these grammars, for the constituents mentioned, either the strictly categorial information is lost, or else it is rescued by having non-branching rules which rewrite each of these adverbial-type categories as Preposition-phrase. In any case the formal distinction between relations and categories is lost, and the constraints on the further expansion of these Preposition-phrases that depend on the types of adverbials they manifest need to be provided, as suggested above, in ways that

have not yet been made clear.[2]

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[2]The problem on such restricted expansion has not been ignored. Chomsky has proposed (ibid., p. 215) that "There is some reason to suspect that it might be appropriate to intersperse certain local transformations among the rewriting rules of the base. Thus Adverbial Phrases consisting of Preposition^Determiner^Noun are in general restricted as to the choice of these elements, and these restrictions could be stated by local transformations to the effect that Preposition and Noun can be rewritten in certain restricted ways when dominated by such category symbols as Place Adverbial and Time Adverbial. In fact, one might consider a new extension of the theory of context-free grammar, permitting rules that restrict rewriting by local transformations (i.e., in terms of the dominating category symbol, alongside of the fairly widely studied extension of context-free grammar to context-sensitive grammars that permit rules that restrict rewriting in terms of contiguous symbols." The proposal given below amounts to incorporating Chomsky's suggestions in the form of a convention on the rules which assign complex symbols to Prepositions and Nouns.

Other grammars that I have seen contain rules allowing more than one Preposition-phrase in the expansion of a single category. In the abbreviated form of these rules, each of these Preposition-phrases is independently optional. Difficulties in establishing the constraints on expanding these categories just in case more than one was chosen remain as before, and two new technical difficulties arise. If there are two independently optional Preposition-phrases in the expansion of Verb-phrase, then we get the same result by skipping the first and choosing the second as we do by choosing the first and skipping the second. The first technical difficulty, then, is that different choices in the base do not correspond to differences in the structure of sentences.[3] The second is that now the

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[3]This problem vanishes if parentheses in phrase-structure rules are understood as having purely abbreviatory functions.

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syntactic relation Preposition-phrase-under-Verb-phrase is not unique in a Verb-phrase just in case more than one Preposition-phrase has been chosen.

The obvious alternative within the present conception of grammar is to introduce new structure in such a way that whenever a sentence contains more than one Preposition-phrase, they are all under immediate domination of categories of different types. If the number of distinct types of Preposition-phrases is large, this solution differs from providing separate category-labels for each adverbial only by greatly increasing the constituent-structure complexity of sentences.

With these difficulties understood, I should next like to ask whether two of the grammatical functions which Chomsky accepts--namely Subject and Object--are in fact linguistically significant notions on the deep structure level. The deep structure relevance of syntactic functions is with respect to the projection rules of the semantic theory. The semantic component recognizes semantic features associated with lexical elements in a string and projects from them the meaning of the string in ways appropriate to the syntactic relations which hold among these elements. It is my opinion that the traditional Subject and Object are not to be found among the syntactic functions to which semantic rules must be sensitive.

Consider uses of the verb OPEN. It seems to me that in sentences (1) and (2)

(1) THE DOOR WILL OPEN.
(2) THE JANITOR WILL OPEN THE DOOR.

there is a semantically relevant relation between THE DOOR and OPEN that is the same in the two sentences, in spite of the fact that THE DOOR is the Subject of the so-called intransitive verb and the Object of the so-called transitive verb. It seems to me, too, that in sentences (3) and (4)

(3) THE JANITOR WILL OPEN THE DOOR WITH THIS KEY.
(4) THIS KEY WILL OPEN THE DOOR.

the common semantically relevant relation is that between THIS KEY and OPEN in both of the sentences, in spite of the fact that THIS KEY superficially is the Subject of one of the sentences, the Object of a Preposition in the other.

In naming the functions of the nominals in these sentences, we might call that of THE JANITOR Agentive, and that of THIS KEY Instrumental. The remaining function to find a name for is that of the subject of an intransitive verb and the object of a transitive verb: a term we might use for this function is Ergative.[4]

[4]The term 'ergative' is introduced apologetically. The syntactic relation for which we are seeking a name has been discussed in connection with the so-called "ergative languages" but in these discussions the word 'ergative' identifies the agent, and some other term, such as 'nominative' or absolute' is proposed for subject-of-intransitive-cum-object-of-transitive. For the syntactic relation I have in mind I borrow the term which identifies those languages which recognize the relation overtly.

None of these functions, as we have seen, can be identified with either Subject or Object.

If we allow ourselves to use these terms Ergative, Instrumental and Agentive, we might describe the syntax of the verb OPEN as follows; It requires an Ergative, tolerates an Instrumental and/or an Agentive. If only the Ergative occurs, the Ergative noun is automatically the subject. If an Instrumental also occurs, either the Ergative or the Instrumental noun may be the subject, as seen in sentences (5) and (6).

(5) THIS KEY WILL OPEN THE DOOR.
(6) THE DOOR WILL OPEN WITH THIS KEY.

If an Agentive occurs, an Instrumental noun cannot be the subject, but, if it occurs, must appear in a preposition phrase after the Ergative, as in (7).

(7) THE JANITOR WILL OPEN THE DOOR WITH THIS KEY.

The Ergative noun can be made subject even if the sentence contains Instrumental and Agentive elements, just in case the verb is capable of assuming its passive form. The Instrumental and Agentive expressions, in this case, contain their appropriate prepositions, as in (8) and (9).

(8) THE DOOR WILL BE OPENED WITH THIS KEY.
(9) THE DOOR WILL BE OPENED BY THE JANITOR.

In the case of two syntactic functions,--Instrumental and Agentive--the noun phrase is preceded by a preposition just in case it has not been made the subject of the sentence. When we add to our consideration the many cases where Object nouns are also marked by prepositions as in such sentences as (10) and (11)

(10) SHE OBJECTS TO ME.
(11) SHE DEPENDS ON ME.

and when, further, we see that even in cases like OPEN, the Ergative has a preposition associated with it in certain nominalizations, as in (12)

(12) THE OPENING OF THE DOOR BY THE JANITOR WITH THIS KEY

we see that an analysis of syntactic functions in English requires a general account of the role of prepositions in our language.

The verb OPEN, fortunately, is not unique in governing syntactic relations that are not identifiable with Subjects and Objects. Other verbs that behave in similar ways are ADVANCE, BEND, BOUNCE, BREAK, BURN UP, BURST, CIRCULATE, CLOSE, CONNECT, CONTINUE, CRUMPLE, DASH, DECREASE, DEVELOP, DROP, END, ENTER (CONTEST),

EXPAND, HANG, HIDE, HURT, IMPROVE, INCREASE, JERK, KEEP AWAY, KEEP OUT, MOVE, POUR, REPEAT, RETREAT, ROTATE, RUN, RUSH, SHAKE, SHIFT, SHINE, SHRINK, SINK, SLIDE, SPILL, SPREAD, STAND, START, STARVE, STIR, STRETCH, TURN, TWIST, WAKE UP, WIND, WITHDRAW. My interpretation of these words is that they have a certain amount of freedom with respect to the syntactic environments into which they can be inserted--a freedom which I assume can be stated very simply. The alternative is to regard these verbs as having each two or three meanings corresponding to their intransitive use or their capability of taking subjects whose relation to the verb can be construed instrumentally in one meaning, agentively in another.[5]

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[5]Edward S. Klima has pointed out to me that the instrumental vs. agentive role of the possible subjects of OPEN has syntactic as well as semantic importance, as can be seen in the unacceptability of the conjunction seen in (i)

(i) THE JANITOR AND THE KEY WILL OPEN THE DOOR

Two agentive subjects may be conjoined, two instrumental subjects may be conjoined, but not one of each.

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2. I recognize, therefore, various categorially introduced Noun-phrase types--suggestive, it seems to me, of the traditional notion of "cases"--each, in English, beginning with a preposition. The syntactic relationship of each of these types to the main Verb of the sentence is defined with reference to the category under which it is introduced, having no direct connection with whatever eventual status it may have as subject or object. The following assumptions are meant to develop the scheme I have in mind by means of a series of specific assumptions.

2.01 The first of these assumptions is that the major constituents of a Sentence (S) are Modality (Mod), Auxiliary (Aux) and Proposition (Prop). The first phrase-structure rule is (13).

(13) S → Mod ⌢ Aux ⌢ Prop

I use 'Proposition' rather than 'Predicate' because it includes what will end up to be the subject of the sentence. Notice that the Auxiliary is in immediate constituent relationship with the entire Proposition, not a sub-constituent of the Proposition. I assume this structure assignment to be semantically justified.

2.02 The constituent Modality contains Interrogative and Negative elements, Sentence Adverbials, Time Adverbials, and various other adverbial elements that are understood as modalities on the sentence as a whole rather than subconstituents of the constituent containing the main verb. I have no strong convictions that these various elements actually comprise a single constituent, but for the time being we may assume that they do. For the purpose of the present discussion I shall also assume that this Modality element is optional, and that it is not involved in any of the observations that I shall be dealing with here.[6]

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[6]For various reasons, I am convinced that instead of treating Negative as an optional subconstituent of the optional constituent Modality, it is better to introduce, as an obligatory subconstituent of the obligatory constituent Modality, a disjunction of the elements Negative and Affirmative. This choice appears to be necessary because of various semantic rules whose effect is to reverse the negativity value of a sentence--changing affirmatives to negatives and negatives to affirmatives.

In the rest of the present discussion, however, I shall omit mention of the Modality constituent, acting as if the first rule rewrites Sentence as Auxiliary plus Proposition.

2.03 The category Proposition includes the verb and all those nominal elements which are relevant to the subclassification of verbs. The rules for rewriting Proposition take it into an obligatory verb followed by the somewhat independently optional elements Ergative (Erg), Dative (Dat), Locative (Loc), Comitative (Com), Instrumental (Ins) and Agentive (Ag).[7]

[7]The variety of expansions of the Proposition displays the range of kernel sentence types in the language. Some possible expansions of Prop are these:

Prop → V Erg (Dat)(Ag)
Prop → V Erg Loc (Dat)(Ag)
Prop → V Erg (Inst)(Ag)
Prop → V Erg Com
Prop → V S (Dat (Ag))
Prop → V S Erg (Ag)

Sentences illustrating various choices in the expansion of Prop are given below:

(i)	JOHN HAS A CAR.	V Erg Dat
(ii)	I GAVE JOHN A CAR.	V Erg Dat Ag
(iii)	I BOUGHT A CAR.	V Erg Ag
(iv)	A COAT IS IN THE CLOSET.	V Erg Loc
(v)	JOHN HAS A COAT IN THE CLOSET.	V Erg Loc Dat
(vi)	JOHN PUT A COAT IN THE CLOSET.	V Erg Loc Ag
(vii)	THE DOOR OPENED.	V Erg
(viii)	THE KEY OPENED THE DOOR.	V Erg Ins
(ix)	THE JANITOR OPENED THE DOOR.	V Erg Ag
(x)	THE JANITOR OPENED THE DOOR WITH THE KEY.	V Erg Ins Ag
(xi)	JOHN IS WITH HIS BROTHER.	V Erg Com
(xii)	JOHN TURNED OUT TO BE A LIAR.	V S
(xiii)	JOHN THINKS THAT HE IS TOO OLD.	V S Dat
(xiv)	I PERSUADED JOHN THAT HE WAS TOO OLD.	V S Dat Ag
(xv)	I FORCED JOHN TO GO.	V S Erg Ag

Roughly speaking, all adverbial elements capable of becoming subjects or objects are introduced in the expansion of Proposition; all others--Time, Benefactive, Frequentative, etc.--are Modality elements. The concepts involved are presumed to be among the substantive universals specified by the grammatical theory.

2.04 All of the non-verb constituents of Propositions are Noun-phrase (NP). The relevant rule takes each of the terms I have mentioned and rewrites it as Noun-phrase

$$(14)\quad \left\{\begin{matrix}\text{Erg}\\ \text{Dat}\\ \text{Loc}\\ \dots\end{matrix}\right\} \rightarrow \text{NP}$$

The syntactic functions appropriate to Noun-phrases, in other words, are identified categorially. The elements which dominate NP are distinct from what we might wish to call the true grammatical categories in that their further expansion is unary and many-to-one. What this suggests is that the form of grammars which I am proposing is at bottom one in which the underlying structures of sentences are representable as rooted trees with labeled nodes and labeled branches. This could be equivalent to a phrase-structure grammar in which, beginning from S, all even-numbered branchings are unary.

Borrowing from Tesnière[8] I shall use the term "actant" for

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[8] Lucien Tesnière, Eléments de syntaxe structurale, Klincksieck (Paris), 1959, esp. pp. 105-115.

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these elements within Propositions which unarily dominate Noun-phrases.

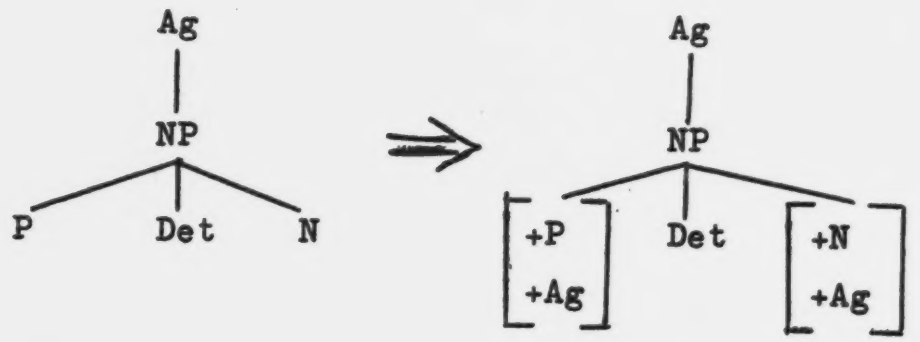
2.05 Another important assumption is that every Noun-phrase begins with a Preposition.

(15) NP → P (Det) (S) N

Thus we see that the distinction between Noun-phrase and Preposition-phrase is no longer necessary. This is all to the good, of course, since "Preposition-phrase" has always been a terminological nuisance. We would really like all constituents labeled "X-phrase" to be constituents having X's as their heads.

2.06 The lexical categories Preposition (P) and Noun (N) take by convention the name of the actant dominating their Noun-phrase as one of the features making up the complex symbols associated with each of these categories. For Agentives, for example, the convention will fill in the feature +Agentive as shown in Figure (16).

(16)



2.07 The selectional restrictions associated with lexical categories serving given syntactic functions will be provided by appropriate subcategorization. We may wish to guarantee, for instance, that agent nouns are animate, a decision expressed by rule (17).

(17) $\begin{bmatrix} +N \\ +Ag \end{bmatrix} \rightarrow [+Anim]$

The feature [+Animate] may be required for Benefactives and, under certain environmental conditions, for Datives as well.

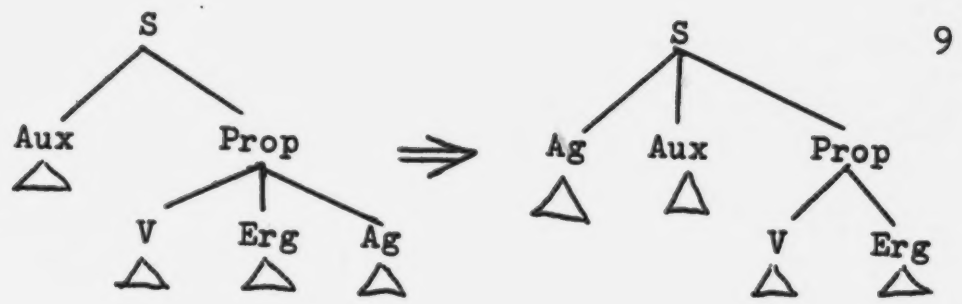
2.08 Some prepositions may be filled in by optional choices from the lexicon. In Locative phrases, though in some cases the Preposition may be automatically determined, generally the choice is optional: OVER, UNDER, IN, ON, BESIDE, etc. These are the prepositions that bring with them semantic information.

2.09 Other prepositions are determined by inherent syntactic features of specific governing verbs. Thus BLAME requires the Ergative preposition to be FOR, the Dative preposition to be ON.

2.10 The remaining prepositions are filled in by rules which make use of information about the actants. Thus, the Ergative preposition is OF if it is the only actant in the Proposition or if the Proposition contains an Instrumental or an Agentive; otherwise it is WITH. The Instrumental preposition is WITH just in case the Agentive co-occurs; otherwise it is BY. The Agentive preposition is BY.

2.11 The subject of a sentence is selected, in accordance with certain rules, from among the Propositional actants. A transformation places the Noun-phrase selected to serve as subject to the left of the Auxiliary. In Ergative-Agentive sentences, unless the Auxiliary contains the passive marker, the Agentive becomes the subject, as in (18).

(18)



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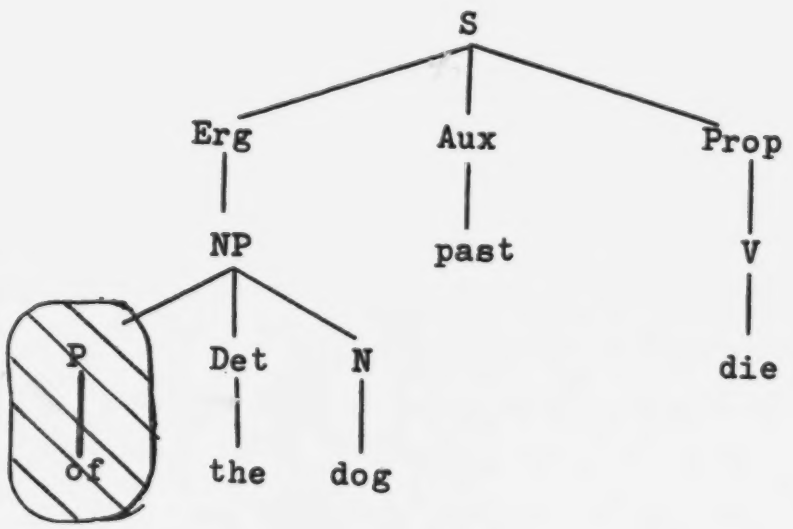
[9]The triangles represent the sub-trees dominated by the categories under which they are drawn.

Notice that the Proposition that has had one of its actants moved to the subject position is what is traditionally called the Predicate.

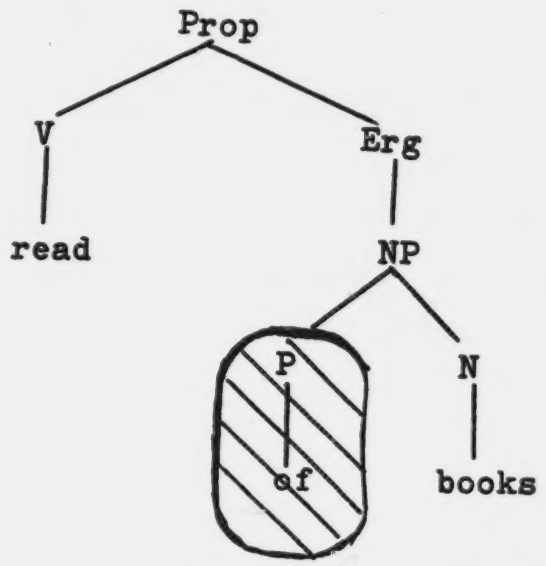
2.12 All Prepositions are deleted in subject position. Figure (19) shows that after the Ergative OF THE DOG becomes the subject of the verb DIE, it loses its preposition.

(19)



2.13 A later rule--a rule to which many Verbs and certain actants are exceptions--deletes Prepositions after Verbs. See Figure (20).

(20)



2.14 Various grammatical processes affect the conditions under which the Preposition-deletion rule operates. In nominalizations the Ergative Preposition stays, as in THE DEATH OF THE DOG or THE READING OF BOOKS.

2.15 In some contexts, the choice of Subject offers certain options. We have seen already that in (21)

(21) WILL OPEN OF THE DOOR WITH THIS KEY

either the Ergative or the Instrumental can be made subject, giving us either (22) or (23)

(22) THE DOOR WILL OPEN WITH THIS KEY.
(23) THIS KEY WILL OPEN THE DOOR.

In the sentence whose underlying form is (24)

(24) PRES SWARM WITH BEES IN THE GARDEN

either the Ergative WITH BEES or the Locative IN THE GARDEN may be

made Subject, losing its Preposition in the process. Notice the sentences

(25) BEES SWARM IN THE GARDEN.

where initial WITH has been lost, and

(26) THE GARDEN SWARMS WITH BEES.

where initial IN has been lost.

2.16 When Ergative and Dative or Ergative and Locative are left behind after a Subject has been chosen, they may be permuted--subject to certain constraints involving the identification of pronouns. Examples where Preposition deletion does not take place are (27) and (28).

(27) TALK ABOUT THIS TO DR. SMITH.
(28) TALK TO DR. SMITH ABOUT THIS.

Examples with loss of the post-verbal preposition are (29)

(29) BLAME THE ACCIDENT ON JOHN.

where FOR was deleted, and (30)

(30) BLAME JOHN FOR THE ACCIDENT.

where ON was deleted. James Heringer of Ohio State University and J. Bruce Fraser of the MITRE Corporation have given me many more examples like this one.[10]

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[10]Fraser speaks of these verbs as having alternate meanings. SPRAY, according to Fraser, has one meaning in (i),
(i) SPRAY THE WALL WITH PAINT

another in (ii).

(ii) SPRAY PAINT ON THE WALL.

I would say merely that the non-agentive actants associated with SPRAY are, in these sentences, WITH PAINT and ON THE WALL. They may occur in either order, but whichever one comes first loses its preposition. Other examples from Fraser are (iii) to (x) below.

(iii) STUFF COTTON INTO THE SACK
(iv) STUFF THE SACK WITH COTTON
(v) PLANT THE GARDEN WITH ROSES
(vi) PLANT ROSES IN THE GARDEN
(vii) STACK THE TABLE WITH DISHES
(viii) STACK DISHES ONTO THE TABLE
(ix) MAKE A CHAIR OUT OF WOOD
(x) MAKE WOOD INTO A CHAIR

2.17 In some cases the transformation which provides the subject of a sentence must be thought of as <u>copying</u> the selected actant in front of the Auxiliary. In Ergative-Locative sentences in which the verb is <u>BE</u>, one Subject-selection possibility is the Ergative. Thus, from (31)

(31) PRES BE WITH SOME BOOKS ON THE SHELF

WITH SOME BOOKS can be made subject giving us, after the WITH drops out, example (32).

(32) SOME BOOKS ARE ON THE SHELF.

Alternatively, however, the Locative actant may be <u>copied</u> in the subject position, giving us (33)

(33) ON THE SHELF ARE WITH SOME BOOKS ON THE SHELF

If the left copy of the Locative actant is replaced by its pro-form, we end up with (34)

(34) THERE ARE SOME BOOKS ON THE SHELF.[11]

[11] I would expect that the expletive IT can be handled in an analogous way. Nominalized sentences are copied in the subject position, giving us something like (i).

(i) THAT HE IS A LIAR IS TRUE THAT HE IS A LIAR

Now, either the right copy can be deleted or the left copy can be replaced by IT, resulting in (ii) or (iii) respectively.

(ii) THAT HE IS A LIAR IS TRUE.

(iii) IT IS TRUE THAT HE IS A LIAR.

It is likely that the copying method of providing subjects should be generalized to all cases, with, simply, the right copy getting deleted in a majority of cases. Where the expected deletion of the right copy is not effected, we get such somewhat deviant sentences as (iv) and (v), borrowed from Jespersen,

(iv) HE IS A GREAT SCOUNDREL, THAT HUSBAND OF HERS.

(v) IT IS PERFECTLY WONDERFUL THE WAY IN WHICH HE REMEMBERS THINGS.

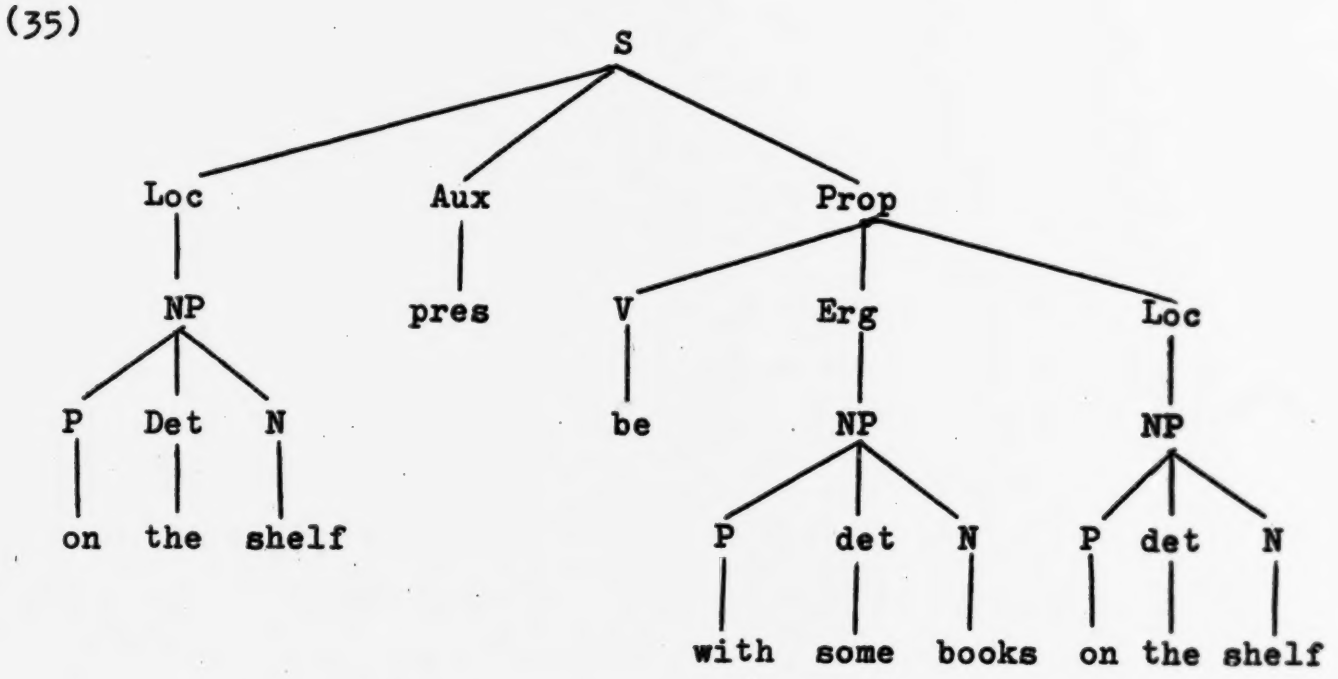
because where the right copy didn't get deleted, the left copy got pronominalized. This seems, too, to be a way of handling cases where a preposition gets left behind in passive sentences. The deletion of the right copy is sometimes only partial, leaving the preposition behind, as in

(vi) MARY CAN BE DEPENDED ON.

2.18 The verb HAVE is here interpreted as a variant of the verb BE in front of the Ergative after a Noun Phrase. Whenever a Locative or a Comitative is made the subject of a Proposition whose verb is BE, this is done by subject copying. Unless, as in the existential sentences, the left copy is changed to THERE, the nominal part of the right copy will be pronominalized. (Possibly what this means is that the repeated noun gets deleted and the features that at this stage have been assigned to the determiner serve now to select a pronoun).

The Locative copying can be seen in figure (35)

(35)



From (35) we get, at a certain stage, something like (36).

(36) *ON THE SHELF IS WITH SOME BOOKS ON THE SHELF.

The sentence-initial preposition is deleted, the repeated phrase THE SHELF is replaced by IT, WITH is deleted, and BE, after Noun Phrase and before an Ergative, gets changed to HAVE.[12] The resulting

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[12]In my present view of the design of a grammar I hold that the lexicon may be divided into two sections, a major-category lexicon which inserts semantically relevant lexical items into underlying phrase-markers, and a minor-category lexicon which inserts "function-words" into surface phrase-markers. If BE and HAVE are regarded as words in the minor-category lexicon, it will not be necessary to speak, as I have here, of "changing BE to HAVE." The structural conditions for inserting BE and HAVE will simply be different.

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sentence is (37),

(37) THE SHELF HAS SOME BOOKS ON IT.

which, thus, I regard as a simplex.

Analogous phenomena are observed in Ergative-Comitative sentences. There too we find HAVE only when the Ergative is not the Subject. In sentence (38)

(38) THE CHILDREN ARE WITH MARY.

the Ergative is the Subject, BE remains unchanged, and the Comitative Preposition stays. If the Comitative is made Subject, it is done so by copying, the right copy eventually undergoing pronominalization. Here BE is followed by an Ergative, so it becomes HAVE, and in the Ergative case the Preposition is deleted. Whereas before we had (38) with ARE, we now have (39) with HAS.

(39) MARY HAS THE CHILDREN WITH HER.

In Ergative-Dative sentences, at least for those cases where the Dative noun is animate, the Dative becomes Subject by transposition rather than by copying. (Alternatively we can say that in this case the right copy is always deleted).

With Ergative-Dative sentences it appears that the choice of subject is determined by the verb. The verb BELONG, for example, requires the Ergative to be Subject, as in (40)

(40) THE TYPEWRITER BELONGS TO TERRY.

while the verb BE requires the Dative as Subject, as in (41).

(41) TERRY HAS THE TYPEWRITER.

2.19 Verbs in the lexicon will be classified according to the Propositional environments into which they may be inserted. Using brute force methods for the time being, I allow options in the statement of these environments. Thus a verb like WAKE UP would

have the feature (42)

(42) [+___Erg (Inst)(Ag)]

while a verb like KILL would have the feature (43)

(43) [+___Erg (Inst)(Ag)]

where the linked parentheses indicate that at least one of two adjacent terms must be chosen.

For WAKE UP we have sentences like (44) with Ergative only; (45) with Agentive; (46) with Instrumental; and (47) with both Agentive and Instrumental in addition to the Ergative.

(44) I WOKE UP.
(45) MY DAUGHTER WOKE ME UP.
(46) AN EXPLOSION WOKE ME UP.
(47) MY DAUGHTER WOKE ME UP WITH AN EXPLOSION.

For KILL, on the other hand, we have (48)-(50) but not (51).

(48) FIRE KILLED THE RATS.
(49) MOTHER KILLED THE RATS.
(50) MOTHER KILLED THE RATS WITH FIRE.
(51) *THE RATS KILLED.

2.20 Notions of synonymy can now be separated from notions of syntactic distribution. The verbs KILL and DIE, for instance, may be given the same semantic characterizations. The relation between the verb and the Ergative is the same for both words, the difference between the verbs being of a syntactic nature, in that KILL requires a co-occurring Agent or Instrument, DIE does not allow an Agent to be directly expressed as part of the same Proposition. In this respect, the essential difference between the

proposals presented in this paper and those of Lakoff[13] appears to be that Lakoff seeks for "synonymous" words identity of semantic reading and what he calls the lexical base, but not identity in lexical extension; I seek only identity of semantic reading. In other words, I do not expect to find in formal grammars support for the distributional definition of meaning.

[13] See George Lakoff, On the nature of syntactic irregularity, Indiana University Doctoral Dissertation, 1966.

3.0 I believe that certain advantages derive from incorporating into a transformational grammar the proposals that have just been sketched, in addition to the possibly unimportant one that sentences do not turn out to need quite so much branching structure as in grammars that need to recognize syntactic relations in terms of immediate-domination relation between categories.

3.1 One of the specific advantages of my interpretation of HAVE is in the simplification this analysis allows to the relative clause reduction rule.

I have said that the Ergative preposition in sentences with Dative, Locatives, or Comitatives but without Instrumentals and Agentives is WITH. The preposition appears in this form in a sentence like (26), but it disappears after BE under those conditions which ordinarily change BE to HAVE, as in (52).

(52) THE GARDEN HAS BEES IN IT.

In older versions of the grammar of English, one relative clause reduction rule was needed for relative-clause-plus-BE, changing (53) into (54)

(53) THE BOY WHO IS IN THE NEXT ROOM
(54) THE BOY IN THE NEXT ROOM

and another rule was needed for relative-pronoun-plus-HAVE, changing (55) into (56)

(55) THE BOY WHO HAS THE RED HAT
(56) THE BOY WITH THE RED HAT

The first of these rules deleted the identified element, the second replaced the identified element by WITH.

If it is true, however, that HAVE, abstractly, is BE before Ergatives, then a single rule will now cover both of these cases. From (53) we get (54) and from (57) we get (56).

(57) THE BOY WHO IS WITH THE RED HAT

We need to require only that the relative-clause reduction rule precede the rules for creating HAVE and deleting WITH after BE.[14]

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[14]But see footnote 12.

3.2 Notions like that of the "understood agent" can be clarified within this scheme. There is a distinction, in other words, between not choosing an Agent on the one hand, and choosing an Agent and subsequently deleting it on the other hand. The distinction is revealed in the choice of Preposition.

The verb KILL, I have said, must take either Instrumental or Agentive and may take both. The Instrumental Preposition is BY if there is no Agentive present, otherwise it is WITH. The Agentive--as in the case of passive sentences--may be a dummy.

Suppose that we construct passive sentences with KILL where the Ergative is THE RATS and the Instrumental is FIRE. In one case we will omit an Agentive, in the other case the Agentive will be chosen but it will be a dummy. Where the Agentive is present in the deep structure, the Instrumental Preposition is WITH; where

there is no Agentive, the Instrumental Preposition is BY. Since the Agentive is a dummy, it gets deleted.

The resulting sentences are (58) and (59)

(58) THE RATS WERE KILLED BY FIRE.
(59) THE RATS WERE KILLED WITH FIRE.

If my analysis is correct, there is an "understood agent" in the sentence with WITH.

Incidentally, the earlier examples with OPEN were a little misleading. I implied that in a sentence like (60)

(60) THE DOOR WAS OPENED WITH THIS KEY.

the underlying representation of the sentence contained only the actants Ergative and Instrumental. If the above observations on WITH and BY are true, however, the sentence should actually be understood as having an implied human agent, and it should be distinct in this respect from a sentence like (61); and I believe it is.

(61) THE DOOR WAS OPENED BY THE WIND.

3.3 More general advantages associated with these proposals relate to the interpretation of historical changes and cross-language differences in lexical structure.

3.3.1 Certain historical changes in language may turn out to be purely syntactic, and, in fact, may pertain exclusively to the status of particular lexical items as exceptions to given transformations, in the sense of Lakoff. Thus, the English Verb LIKE did not change in its meaning or in its selection for Ergative-Dative sentences, but only in its status as an exception to the rule that fronted actants are neutralized to the so-called nominative form.

3.3.2 Lexical differences across languages may not be as great as we might otherwise have thought. It would ordinarily be said that English KILL and Japanese KOROSU have different "meanings" because the Japanese verb requires an animate Subject while English allows us to say that FIRE KILLED HIM, A FALLING STONE KILLED HIM, and the like. Once we see that even in English both KILL and DIE have the same underlying semantic representation, the difference between the two situations appears to be rather superficial. Both languages have words with the same meaning which can co-occur with Ergative and Instrumental. English has two such verbs, one of which allows the Instrumental phrase to become the Subject. The difference is no deeper than that.

4. There are, as the reader may have guessed, a great many extremely serious problems which continue to be completely mysterious. Does this system provide the constituent structure needed for coordinate conjunction? How are predicate-adjective or predicate-noun sentences to be dealt with in this scheme? Do Manner adverbials belong inside the Proposition or are they part of the Modality? How is the relation sometimes found between Manner adverbials and the "Subject" of the sentence to be expressed in this system? What about the generalizations on Noun-phrase interchange? Many of these problems, fortunately, are no less serious in "Subject-Object" grammars.

I could summarize my remarks by saying that I regard each simple sentence in a language as made up of a verb and a collection of nouns in various "cases" in the deep structure sense. In the surface structure, case distinctions are sometimes preserved, sometimes not--depending on the language, depending on the Noun, or depending on idiosyncratic properties of certain governing words. Belief in the superficiality of grammatical case rises from consideration of the "nominative", which really constitutes a case neutralization that affects Noun-phrases that have been made the Subject of a sentence, and of the "genitive", which represents another kind of neutralization of case distinctions, one which

occurs in Noun-phrase modifiers derived from sentences, as illustrated by the reduction to the so-called "genitive" of both Agentive and Ergative in such expressions as THE SHOOTING OF THE HUNTERS.